

# Abstract

## **Observing System Simulation Experiments for GPS Altimetry**

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Traditional altimetry, such as on Topex/Poseidon, is limited to looking in the (nominal) nadir direction and obtaining one height observation at a time below the altimeter, following very nearly repeatable tracks passing over the same point every ten days. The track separation varies, being largest at the equator where it is about 300 km. By contrast, a GPS receiver in low-Earth orbit (LEO) with an antenna pointed toward the Earth's surface can, in principle, track about 10 GPS reflections simultaneously, therefore providing a coverage that is an order of magnitude denser than nadir-viewing altimeters. It is anticipated that the GPS altimetry has the potential to improve our current radar altimetry in two ways: high spatial resolution to resolve mesoscale eddies, and improved temporal resolution to track fast changing features. In this talk, results from an eddy-resolving ocean general circulation model will be used to simulate the GPS signal from both airplane and satellite platforms with an aim to derive the error budget due to different spatial and temporal sampling schemes.